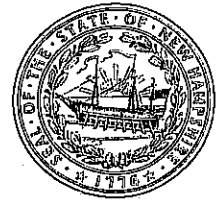




The State of New Hampshire  
**DEPARTMENT OF ENVIRONMENTAL SERVICES**



**Thomas S. Burack, Commissioner**  
February 17, 2009

The Honorable Naida L. Kaen, Chairman  
House Science, Technology, and Energy Committee  
Legislative Office Building, Room 304  
Concord, NH 03301

Re: HB 352 relative to banning corn-based ethanol as an additive to gasoline sold in New Hampshire

Dear Chairman Kaen and Members of the Committee:

The Department of Environmental Services (DES) is opposed to House Bill 352, which would ban the use of corn-based ethanol in gasoline sold in New Hampshire. Such a ban would likely result in fuel shortages in New Hampshire, increase the cost of gasoline in the state, and hinder efforts to reduce greenhouse gas emissions in the state.

The Clean Air Act requires that reformulated gasoline (RFG) be used in areas with the worst smog pollution to reduce harmful emissions that cause ground-level ozone.<sup>1</sup> In New Hampshire, this includes the southern four county area of Strafford, Rockingham, Hillsborough, and Merrimack counties. In 2005, the New Hampshire General Court passed House Bill 58 banning the importation of gasoline with greater than 0.5% Methyl tertiary Butyl Ether (MtBE), a fuel additive that reduced air emissions to comply with RFG requirements, but was found to contaminate ground water, into New Hampshire, effectively banning MtBE as a gasoline additive in the state. Maine, Vermont, and Rhode Island enacted similar bans and the petroleum industry, still required to meet RFG requirements, responded to these bans by replacing MtBE with ethanol. While RFG regulations do not require the use of ethanol in fuel, it is used almost exclusively by the petroleum industry as the MtBE replacement that enables them to meet the RFG emission requirements.

The vast majority of today's ethanol is derived from starch- and sugar-based feedstocks. The sugars in these feedstocks are relatively easy to extract and ferment using widely available biochemical conversion technologies, making large-scale ethanol production affordable. Starch-based feedstocks include plants such as corn, wheat, and milo, and sugar-based feedstocks include sugar cane and sugar beets. In the United States approximately 90% of today's ethanol comes from corn. Brazil, the world's second-largest ethanol producer behind the United States, uses sugar cane as a feedstock.<sup>2</sup> The federal Renewable Fuels Standard (RFS) mandates that a certain portion, 36 billion gallons by 2022, of the nation's fuel supply come from renewable resources such as ethanol. More than half of the 2022 mandate must be satisfied by advanced biofuel,

<sup>1</sup> <http://www.epa.gov/OMS/rfg.htm>

<sup>2</sup> [http://www.afdc.energy.gov/afdc/ethanol/feedstocks\\_starch\\_sugar.html](http://www.afdc.energy.gov/afdc/ethanol/feedstocks_starch_sugar.html)

Based on a joint U.S. Department of Energy/U.S. Department of Agriculture study the current sugar and starch feedstocks merely scratch the surface of total U.S. ethanol feedstock potential. The study found that 1.3 billion tons of biomass—predominantly cellulosic feedstocks—could be produced for biofuel production in the United States annually with only modest changes in farming practices.<sup>4</sup> This quantity and variety of feedstocks could be used to produce enough biofuels, mostly ethanol, to satisfy about one third of current U.S. petroleum demand.<sup>5</sup>

Different feedstocks have different environmental impacts. Researchers have determined that most biomass feedstocks preserve and increase carbon stores in the soil.<sup>6</sup> Ethanol produced from starch- and sugar-based feedstocks that require soil tilling do not have the benefit of storing carbon in the soil. However, these original feedstocks are important because they have enabled development of an ethanol-based fuel industry, including fueling infrastructure and flexible fuel vehicles. In the long run, it is believed that cellulosic feedstocks will play the leading role in ethanol production and that the current corn ethanol market is necessary to support this growing industry.

By 2012, the National Renewable Energy Laboratory estimates that New Hampshire has the potential to produce 165 million gallons of ethanol annually. The state currently uses an estimated 698 million gallons of gasoline each year. Cellulosic ethanol has the potential to provide 15.5 percent of the State's gasoline fuel needs.<sup>7</sup> Numerous companies, including Mascoma Corporation whose research laboratory is located in Lebanon, NH, are diligently working on bringing cellulosic ethanol to the mainstream market.<sup>8</sup> This research could be the key to an economic revival of New Hampshire's wood pulp industry.

There is tremendous potential for ethanol to help reduce our reliance on petroleum for transportation. Meeting that potential entirely with crop-based biomass such as corn is unrealistic and would have undesirable consequences including increased greenhouse gas emissions, water pollution, and food shortages. Cellulosic ethanol is renewable and can be made from nonfood plants. Data show that the energy balance and environmental impacts of advanced and cellulosic biofuels is greatly improved as compared to the first generation, or conventional, biofuels such as corn ethanol. However, due to cost of production it is unlikely an ethanol market, including associated fuel production facilities, distribution facilities, and flexible fuel vehicles, would have developed at this time or to this scale without the use of low cost corn ethanol. The RFS wisely establishes a limit on the amount of corn ethanol that should be produced in this country. Both federal and state governments are focusing attention on "life cycle analyses" of all fuel options

<sup>4</sup> Biomass as a Feedstock for a Bioenergy and Bioproducts Industry: The Technical Feasibility of a Billion Ton Annual Supply; April 2005, US Dept. of Agriculture, [PDF 2.8 MB](#)

<sup>5</sup> [http://www.afdc.energy.gov/afdc/ethanol/feedstocks\\_resources\\_national.html](http://www.afdc.energy.gov/afdc/ethanol/feedstocks_resources_national.html).

<sup>6</sup> [http://www.eurekalert.org/pub\\_releases/2008-12/uoiarcw120208.php](http://www.eurekalert.org/pub_releases/2008-12/uoiarcw120208.php)

<sup>7</sup> <http://www.afdc.energy.gov/afdc/sabre/sabre.php>

<sup>8</sup> <http://www.investincellulosicethanol.com/>

wisely establishes a limit on the amount of corn ethanol that should be produced in this country. Both federal and state governments are focusing attention on “life cycle analyses” of all fuel options before deciding which alternative fuel sources should be pursued. The evidence is clear, however, that advanced biofuels are a desirable commodity.

Thank you again for the opportunity to comment on HB 352. Please call me at 271-3503 or Rebecca Ohler, Supervisor of the Mobile Source Section, at 271-6749 or [rebecca.ohler@des.nh.gov](mailto:rebecca.ohler@des.nh.gov) if you have any questions or would like further information.

Sincerely,



Thomas S. Burack  
Commissioner

cc: Rep. David Campbell  
Rep. Gene Chandler